Fostering Metacognition in a Professional Course: towards redesign of a Master’s programme in Occupational Psychology

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Introduction

Metacognitive skills such as critical reflection, problem solving and contextual/situational awareness are core employability skills (amongst others); they also foster deep, constructivist approaches to learning and facilitate lifelong learning via critical reasoning and transformation of prior learning in Piagetian terms (Montgomery, 1994; Biggs, 2003). These skills are also desired outcomes for occupational psychology master’s students/consultants-in-training (my own subject teaching area). Upon graduation, many students further their consultant-in-training skills and must continually self-monitor understanding and tailor solutions to meet client problems and challenges independently. These skills (amongst others) are then externally assessed and full chartered status awarded. Thus learning must be active and continual. However, the course aims, outcomes and assessment criteria generally make only vague references to reflection in particular; remaining mostly implicit and part of a hidden curriculum. Reflection is only informally assessed and not consistently part of the course structure or teaching strategies. Thus, these skills are often poorly demonstrated within student coursework.

This is not a unique problem. Firstly, Kember et al. (2000) note that many courses lack reflective assessment methods due to controversies of definition creating omissions. More broadly, Cowan et al. (2004) state that some higher education institutions have been slow to address the challenges of course re-alignment to meet employability demands, from lack of clarity as to how such changes can be managed. Thirdly, Knight (2001) notes that some learning outcomes can only be emergent, such as tacit knowledge, and cannot be anticipated, let alone clearly expressed. Indeed, some learning outcomes and objectives are highly complex, as here, and are not easily defined by short statements. This may explain omissions and/or further lengthy lists resulting in lack of transparency. Whilst not easily resolved, a solution is nonetheless required as the Dearing Report (NCIHE, 1997) and the Higher Education Quality Learning Council (HEQC, 1997) clearly states the need for explicit aims and desired outcomes. Moreover, benchmarking statements should be
included to clarify minimum standards (QAA, 2002) and, in relation to business and management, this includes the “development of reflective skills” (point 4.2, Masters Awards).

The occupational psychology master’s programme is a one-year, full time course (requiring attendance two days per week). As a pre-requisite, students must meet graduate basis for registration (GBR) status with the British Psychological Society (BPS) through successful completion of an accredited undergraduate psychology curriculum. The master's course is also accredited by the BPS which imposes subject-matter content and assign external assessors to ensure standards are comparable to other institutions in accordance with the Framework for Higher Education Qualifications (FHEQ) and provide reports to the institution as part of the wider auditing process, in line with QAA requirements (QAA, 2002a).

Although the course is modular in structure, this principle is not applied in the strictest sense, as all modules must be passed. Students cannot ‘pick ‘n’ mix’. However, modules are taught separately (mainly due to resourcing and time constraints) and this poses a challenge for curriculum integration and coherence (see Perkins, 2003). Indeed, poor integration has been evidenced within coursework.

This paper discusses proposals for the redesign of the course. It deals with the enhancement of aims/outcomes with reference to one particular module, for example purposes, along with assessment criteria and teaching-learning activities, all with a view to fostering metacognitive skills of critical reflection.

Although didactic lectures are still sometimes applied during the course, they do not generally stimulate higher-order thinking and active learning (Bligh, 2002). Many students are therefore passive learners and continually seek tutor answers on work that should be independently conducted. An alternative pedagogical approach is the inclusion of problem-based tasks that model critical thinking and integration of theoretical and experiential knowledge. These could replace any current ‘spoon-feeding’ workshop activities.

**Curriculum Design Approach**

Moon’s (2001) curriculum design model is applied to this redesign. It is favoured here as it is an aims and outcomes to assessment driven approach, rather than placing the onus on content at an early stage, as typified by some approaches. This model reminds the designer that if aims and learning outcomes are presented, aligned mechanisms must be in place to facilitate their achievement (Biggs, 2003). However, whilst the model considers some structuring factors, it omits consideration of the philosophical issues such as underlying beliefs about and approaches to learning and course structure. With this in mind, the underpinning
nature of the competency-based course structure currently adopted is critically discussed, and a problem-based alternative proposed that places emphasis on the cognitive and experiential approaches to curriculum development (Toohey, 1999; Kolb, 1984).

The current curriculum approach is intellectual, focused on considering the subject matter that drives associated required knowledge, skills and attitudes, leading to a competency structure like many profession-orientated programmes. Whilst this makes expectations transparent and knowledge can be carefully sequenced, Greenhalgh (1999) states that ‘deconstruction of professional competence into component competencies can be flawed as it can lead to a behaviourist (and therefore reductionist), task oriented model ignoring complexities of practice’. A quick study of one of the module aims and outcomes (appendix IA) indicates mainly a list of required declarative and procedural knowledge, around the administration and interpretation of occupational selection and assessment techniques. Some teaching activities focus on transfer of knowledge, rather than “growing”. Talbot (2004) notes that this approach risks compromising deep and reflective engagement and drives easily measured assessment criteria at the expense of higher order competencies and more complex practice. Talbot also states that performance should embrace ‘perception and situational understanding not based on rules but development of flexible behaviour in response to intuition’. This requires experience, dialogue, argument, reflective knowing – metalearning.

In redesign, Talbot’s advice is acted on via a combination of cognitive and experiential approaches, embedded within a problem-based approach. This approach is desirable particularly since practitioners are expected to identify organizational problems, implement appropriate rectification within specific cultural climates, reflect upon the experience, revisit one’s own learning and seek further understanding: akin to the doctor-patient scenario. Good teaching should foster student control over how to learn, guiding areas of focus and facilitating ongoing enquiry (Ramsden, 1992). Students must identify their own gaps in understanding and inform their own directions of study. This is exactly the kind of activity expected of practitioners.

**Revised Aims and Outcomes**

The cognitive approach to curriculum aims to encourage rigorous analysis, problem identification and solving; tasks are focused upon practising cognitive abilities within problem-based scenarios. These requirements are reflected within revised aims and outcomes to one particular module (appendix IB). To facilitate cohesion and consistency, some of these learning outcomes [LOs] could be applied across all component modules of the course.

The revisions are informed by the SOLO (cognitive) taxonomy (Biggs and Tang, 1998) and experiential taxonomy devised by Steinaker and Bell (1979). The SOLO
model is applied to inform the hierarchical stages of qualitative learning changes moving from simple description (LO1) to increasingly inter-related and integrated elements (LO5). The generic experiential taxonomy, plus a specific extraction from a cultural competency model (Lister, 1999), are applied to clarify involvement in experiences intellectually, through to taking ownership of learning from experiences and sharing with others – as stated in the revised aims. The cultural example is applied to help students understand cultural influences (both client and self) and integrate these within problem-solving tasks. Embedded within the module outcomes are declarative, procedural and functional or tacit knowledge requirements (Biggs, 2003) within the context of problem-based tasks.

However, it is acknowledged that some outcomes are unpredictable and emergent (Hussey and Smith, 2003) and, given the problem-based approach combined with reflection, tutors should be willing to ‘go with the flow’ and pursue particular trains of thought as they arise and where appropriate.

Revised Assessment Criteria

Following Moon’s assessment-driven model, revisions to assessment criteria and some workshops has been undertaken to ensure alignment with aims and outcomes. The current criteria omit explicit critical reflection and yet, as noted earlier, this is a suggested benchmarking statement. Moreover, these criteria allude to consideration of client culture, values and political awareness under the term ‘contextual issues’, yet cognitive concepts like ‘comparing’, ‘relating’ and ‘contrasting’ are omitted. The updated criteria now include the reflective component and contextual issues are clarified (appendix 2).

Whilst critical reflection skills are notoriously difficult to conceptualise, the criteria have nonetheless been informed by underpinning theory towards a holistic approach to reflection. Schon (1987) posits a two-dimensional model based on time: reflection-in-action and reflection-on-action. The latter is past-oriented whilst the former is deemed to be higher-order and based upon simultaneous reflection and modification of action; a form of emergent learning which revolves around sensing the present and making adjustments to action following reflection. However this has been reconciled with single-loop learning on the basis that further understanding is only generated from existing schemas (King, 2006). On the other hand, Hatton and Smith’s (1995) three-stage developmental model implies double-loop learning whereby assumptions are challenged from self-questioning methodology. The authors describe a hierarchical model: descriptive, dialogic and finally critical reflection. What changes is the form of writing and thinking but not the experiences used (Fund et al., 2002). The criteria also include Van Manen’s (1991) hierarchical cognitive model, and Barnett’s (1997) reflective practitioner model, which embraces an affective component towards a holistic approach to reflection. Bourner’s (2003) self-questioning items are also applied as part of supporting
materials. Whilst it is acknowledged that Shiel and Jones (2002) and Fisher (2003) also offer a multi-dimensional model for assessment purposes, the former omits part of Schon’s model and make no reference to ethical and moral reflection explicitly within the socio-political context, while the latter omits a holistic approach taking no account of the affective component and leaves out Schon’s model entirely. This corrective model can only assist progress within the field. Guidance notes together with examples of self-questioning items are also designed to help orientate development (appendix 3).

The Assessment Tasks

Given current resourcing constraints and heavy student workload, an additional assessment task was ruled out as this could de-motivate and potentially exacerbate surface approaches to learning, by introducing more tasks in tight timeframes. Therefore, the existing self-learning logs attached to the practical coursework will now be assessed using the proposed reflective criteria; a clear amendment to the student task. At the same time, the need for demonstrating situational awareness within the main coursework is highlighted within revised assessment criteria. However, since reflective skills develop over time, formative assessment with diagnostic feedback and only indicative grading could be recommended initially. These skills could then be summatively assessed within the Professional Practice Portfolio, near the end of the course, presented in the form of an overall final critical commentary. This ensures that students who initially experience difficulties are not penalised and de-motivated. Indeed, Black and William (1998) suggest that a method to encourage students to engage with feedback “is to provide formative feedback without a grade as students will then read the comments more carefully”, and are more likely to fully disclose areas of difficulty (Knight, 2001).

The Teaching Strategy and Activities

Classroom Activities

Didactic lecturing ought to be significantly reduced. Bruner’s constructivist theory advocates Socratic learning to encourage assimilation and accommodation within our own framework of mental models (Bruner, 1973). Any transmission element should be refocused at the student level by relating necessary key concepts to ‘everyday’ experiences. Frederick’s (2001) idea of working with student testimonies that are then linked to key themes can aid relational thinking. As student numbers are typically small (20-25), small group teaching and peer group learning can be introduced. Cooperative learning leads to improved reasoning and higher self-esteem (Diamond, 2003), and also facilitates scaffolding and going beyond zones of proximal development.

As the changes represent significant alterations to common teaching methods, the curricular aims and outcomes will be discussed with the students at the outset to
clarify expectations. Chalmers and Fuller (1996) recommend individual reflection on tutor expectations before small-group discussion and feedback. Defined outcomes help to set the boundaries of expectation, to inform the learning contract, and to raise teaching effectiveness. In small syndicates, students will then be asked to share testimonies and prior understanding of key concepts, and to relate common life events to these, in order to facilitate initial understanding.

To enhance cognitive skills (and communication and interpersonal skills), the introductory classroom session will also focus on pre-reading guides. Subsequent sessions will entail ongoing discussion of content through to critical analysis, in peer learning groups and syndicates, as recommended by English et al. (1997). This facilitates progression from lower to higher order metacognition.

In alignment with a problem-based learning approach, students will be provided with even further opportunities to try out learning. But first they will study examples of concepts in action, to develop critical analysis of both research and application, using presented case studies followed by small-group critical discussion and evaluation. Students will then progress to working in problem-based learning sets. Broad problems will be posed without solutions, thus necessitating further analyses of the antecedent situation (including cultural and political issues etc) prior to identification of solutions. Working on problems could prompt further student awareness of their learning needs that in turn could trigger self-help groups working collaboratively or individually.

Finally, reflective development should be continuous. Students will be encouraged to note reflective points from experiences, taking account of other group member perspectives, and collectively discuss these and apply them in their self-learning logs.

**Workshop Activities**

Workshops mostly focus on real-life problems akin to coursework topics. In syndicates, students attempt identification of client needs and solutions prior to class presentation and tutor feedback. Yet this omits situational/contextual considerations (client and self) and reflective activities. O’Hara’s (2006) seven-step tutor-led reflective workshop will now be implemented. This includes formulation of personal reflections from dealing with a particular piece of coursework (of student choice), exchange of reflective experiences within pairs and collective reflection on the experience of sharing. Critical reflective thinking and writing tasks can also be facilitated via further preparation of draft reflective points that can again be applied to self-learning logs. Wilson-Medhurst (2006) reports that application of modular-related experiences and reflections to written journals together with tutor support and feedback resulted in 87% of a student cohort engaging with key concepts. Such active methods are therefore advocated here.
Finally, self-diagnostic student checklists can also be used to reflect on learning tasks (Gibbs and Habeshaw 1992., Norton et al 2002). The check sheet raises student consideration as to the extent of understanding of the central problem and concepts used. Student reflections could serve additionally to inform discussion during one-to-one meetings with personal tutors (usually members of the course teaching team). These meetings are usually student-led and used to resolve specific queries, and often result in students requesting answers to problems, behaviour that is symptomatic of passive learning. The use of check sheets aims to reinforce student responsibility for learning and self-monitoring.

**Conclusion**

In essence, this experiential, cognitive and problem-based cyclical model can be easily applied within class; it encourages self-directed learning and aligns with aims and outcomes. However, care must be taken that presented problems are initially straightforward, to ensure reasonable completion and, in turn, enhance student self-efficacy. More specifically, critical reflective skills do not happen over-night; they take time and skill to develop. Students may initially experience discomfort in disclosing what can be perceived as personal and private thoughts. Teaching must encourage this, support mechanisms should be in place, student feedback on the provision of such methods must also be sought and reassurances offered where difficulties are encountered.

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**Biographical note**

Sarah Johnson is a Chartered Occupational Psychologist and senior lecturer on a Master’s programme at London Metropolitan University. She also undertakes consulting practice. Sarah is currently developing and piloting a critically reflective learning model as part of her PhD studies. It is a key aim to disseminate the findings from her studies to facilitate ongoing debate toward facilitating and improving reflective learning and writing skills amongst practitioners-in-training and practitioners.

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CURRENT AIMS

To provide students with knowledge of the issues surrounding selection and assessment techniques and legislation in an organisational setting.

To understand the application of these theoretical concepts, so that they can make informed judgements of the appropriateness, implementation and evaluation of a range of instruments.

CURRENT LEARNING OUTCOMES

Demonstrate a thorough knowledge of a range of ‘traditional’ assessment procedures and the appropriateness of their application in the context of a selection process.

Demonstrate a thorough knowledge of recent technological developments in the techniques.

Show an awareness of ethical and legal obligations arising from selection and assessment in an organisational context.

Demonstrate an understanding of the processes involved in the design and evaluation of an assessment technique, including test construction.

Develop an understanding of standards required for choosing selection methods.

Demonstrate skills acquired through practical work relevant to the administration and interpretation of assessment techniques, sensitive to both candidates’ and organisations’ perspectives.
Revised Aims

The topic of selection and assessment is wide-ranging and there is much choice in what could be included within the module. For this reason, the aim of the module is not just to provide you with a particular sample of techniques but also to provide opportunities for you to learn about and then reflect upon various techniques both recommended and of your own choice and your own experience of learning and applying these to particular organisational contexts and problems with your own values in mind. With this in mind, the learning objectives are listed below:

*Note:* This broad statement reflects the need for student autonomy and self-reflective knowledge within the context of a problem-based structure

Revised Learning Outcomes

At the end of this module, students are expected to be able to:

1. Describe and explain understanding of a range of ‘traditional’ assessment models and procedures
2. Analyse a range of assessment models and procedures and then identify suitable techniques to solve particular client problems *
3. Critically evaluate assessment models and procedures, and compare and contrast themes and patterns across them
4. Develop cultural awareness by demonstrating familiarity with the broad differences, similarities and inequalities in beliefs, values and practices amongst different industries *
5. Identify both self and client values, beliefs, dominant culture and the wider economic and political contexts through description and analysis that informs application of selection and assessment solutions *
6. Demonstrate an awareness of ethical and legal obligations arising from selection and assessment models and processes in organisational contexts through description and application *
7. Develop practice of and demonstrate reflection upon action and reflection in action from practical problem-solving selection and assessment tasks and wider personal experiences *
8. Be able to modify and evaluate personal views on what it means to learn the subject matter as a result of the experiences gained during this module *

*Note:* These outcomes are not split into specific KSA’s due to difficulties in separation. The words ‘will be’ are not used as tutors cannot guarantee that students learn. The words ‘expected to’ places the onus of responsibility upon the learner.

* Outcomes that would be applied across all course modules to facilitate cohesion and consistency
### Addressing the task
The degree of directness, specificity and extent to which the various facets of the task/question have been clearly identified.

Students should clearly identify the client needs/problems from collection of appropriate data and provide rationale for application of chosen theory, models and methods before results can be explained and evaluated theoretically.

### Accuracy and Scope
The extent to which the account is a factually informed one and includes relevant argument, detail, and well synthesised material.

Theories and models should be clearly conceptualised demonstrating, through discussion and then analysis, a genuine understanding of the material rather than simple restatement of others’ work without serious errors of omission. Evidence of sufficient reading around the topic is expected and current trends and developments described and discussed.

### Critical Reflective perspective
The extent to which empirical evidence and practical examples are borne in mind. Evidence of critical thinking and fresh insights into issues presented. In addition, the extent to which the practical experience is reflected upon and identification of learning acquired and required and future action plans considered.

Presented theories, models, methods and associated research should be critically analysed. In the absence of empirical work, practical examples (case studies for instance) can be applied and also critically evaluated to illustrate further ideas and fresh insight for application. Contending points of view should be compared and contrasted rather than ignored.

Critically reflective thinking is assessed within coursework-related self-learning logs. This should contain evidence of reflective thinking. Writing from the “I” perspective, the key learning experiences should be described and related to understanding gained and further learning required – these could be linked to theories and models. Consideration of personal values, strengths and weaknesses should be considered alongside consideration of the perspective of others (clients, peers, colleagues). The account should include evidence of reflection upon action (reflecting back to an experience after the event) and any reflection taken during action (reflections generated simultaneously, during coursework or practical work) and be linked to future action plans.

### Structure and Logic
The extent to which the work/answer is structured, coherent and well integrated, and comes to a logical conclusion.

The work should be suitably introduced clearly describing the organisational requirements. The parameters of intended aims must be clearly stated together with a clear rationale. The theme of the work/answer should be maintained. Appropriate conclusions and client recommendations should be made and linked to underpinning theory and models.
Theory and Practice Integration
The extent to which applied, practical, and professional issues are considered, discussed and applied in relation to theory

Both self and client idiosyncrasies must be described including values, beliefs, cultural issues and the wider political and economic contexts. Identification of client needs, solutions and possible problems in implementation together with theories, models and methods should be evaluated and chosen with regard to the above contexts. The ethical and legal obligations should be described and evaluated.

APPENDIX 3 – Example guidance notes for Reflective Assessment Criteria

Reflection within the socio-historical context – morals and ethics:
The extent to which you examine and reflect upon ethical and moral dilemmas arising from working within a particular context or situation, where commercial, economic and social pressures may be at odds with best practice principles and decisions made in that context.

Provision of a clear plan of action from the reflections for tackling future events:
Following on from critical reflection of your strengths and weaknesses (linked to events, theories and models from the literature), the extent to which these are linked together to generate decisions about how to act in the future.

Reflection upon multiple perspectives:
The extent to which you integrate and apply the perspectives of others’ (clients, learning peers, work colleagues) together with the wider social and ethical context to further inform your opinion of the events and explore reasons for the judgements you made and the decisions taken.

Examples of self-questioning items:

I need to further understand the materials applied in order to improve my performance on this task
I often re-appraise my experience so I can learn from it and improve for next time
This experience has led to further awareness of my strengths
I have discovered faults in what I had previously believed to be right about myself.
These experiences have challenged some of my firmly held ideas about myself.
I like to think over what I have been doing and consider alternative ways of doing it.
I sometimes question the way others do things and revise my own methods of tackling the problem.